

REMARKS

Claims 12-22 have been canceled, as they have been presented in a divisional application. Claims 1, 23, and 34 have been amended. Claims 1-11 and 23-40 remain pending. Applicant reserves the right to pursue the original claims in this and other applications.

Claims 1, 2, 6-8, 10, 11, 23, 24, 28-30, and 32-33 stand rejected under 35 USC 102(b) as being anticipated by U.S. Patent No. 5,711,989 to Ciardella ("Ciardella"). Claims 4, 26, 34-36, 38 and 40 stand rejected under 35 USC 103(a) as being unpatentable over Ciardella in view of U.S. Patent No. 5,906,682 to Bouras ("Bouras"). The rejections are traversed.

The present invention, as embodied by independent claims 1, 23 and 34 relates to an apparatus for manufacturing semiconductor devices. The claimed apparatus includes an image information device for providing image information to the control unit. Furthermore, the control unit calculates a position for discharging droplets of raw sealant resin on the first surface of the semiconductor wafer substrate based upon the image information. As such, the control unit performs the calculation to determine where the droplets of raw sealant resin should be discharged.

As amended, claim 1 recites an apparatus comprising, inter alia, "an image information device for providing image information of said semiconductor wafer substrate to said control unit, wherein said control unit is constructed to calculate a position based on said image information for said drive mechanism to displace said at least one of said semiconductor wafer substrate and said discharging nozzle, and for said discharging mechanism to discharge said droplets of raw sealant resin on said first surface of said semiconductor wafer substrate excluding said at least a portion of said electrode."

Similarly, independent claim 23, recites an apparatus comprising, inter alia, "means for providing image information of said semiconductor wafer substrate; and means for calculating a position, based upon said image information, for said discharging mechanism to discharge said droplets of raw sealant resin on said first surface of said semiconductor wafer substrate excluding at least a portion of said electrode, and for said drive mechanism to displace at least one of said semiconductor wafer substrate and said discharging nozzle."

Similarly, claim 34 recites “an image information camera for providing image information of said semiconductor wafer substrate; and a control unit for controlling said discharging head and said drive mechanism, wherein said control unit is adapted to calculate a position, based on said image information, for said discharging head to discharge droplets of raw sealant resin on said semiconductor wafer substrate excluding said at least one electrode, and for said drive mechanism to displace said at least one of said semiconductor wafer substrate.” Ciardella fails to disclose or suggest these limitation as recited in claims 1, 23, and 34.

In fact, Ciardella discloses a video camera determining a location of a selected dot already dispensed onto the circuit board. In the Ciardella system, the video camera is not used to determine a position prior to dispensing a dot onto the circuit board. Furthermore, Ciardella does not disclose or suggest that the camera is used by a control unit to displace the semiconductor wafer substrate. On the other hand, the image information device of the present invention provides image information for a control unit to determine a position prior to discharging droplets of raw sealant resin, as recited in claims 1, 23, and 34. Additionally, the control unit of the present invention is constructed to receive images from the image information device to calculate a position for displacing the semiconductor wafer substrate, as recited in claims 1, 23, and 34.

Applicant respectfully submits that Bouras also fails to disclose an image information device as recited by claims 1, 23, and 34. Furthermore, the Office Action correctly admits that Bouras should not be combined with Ciardella as the combination of these teachings would require a modification of one or both of the references that would “change the principle of operation of the prior art invention being modified.” M.P.E.P § 2143.01. The Office Action states that Bouras is merely being relied upon for details as to the temperature controller, and to show that it would be obvious that Ciardella can handle the substrates in Bouras. Nevertheless, these relied upon details of Bouras are insufficient to cure the deficiencies of Ciardella. Accordingly, neither of the cited references, whether considered alone or in combination teach or suggest the claimed invention as embodied by the unique combination of elements recited by independent claims 1, 23, and 34.

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In addition, each of the dependent claims 2-11, 24-33, and 35-43 depend from independent claims 1, 23, and 34, respectively, and contain all of the limitations recited therein. Accordingly, for at least these reasons, withdrawal of the rejections is respectfully requested.

In view of the above amendment, Applicant believes the pending application is in condition for allowance and the Examiner is respectfully requested to pass the application to issuance.

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Respectfully submitted,

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